

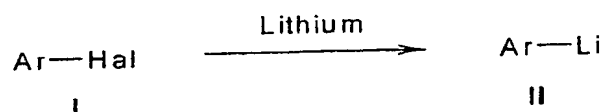
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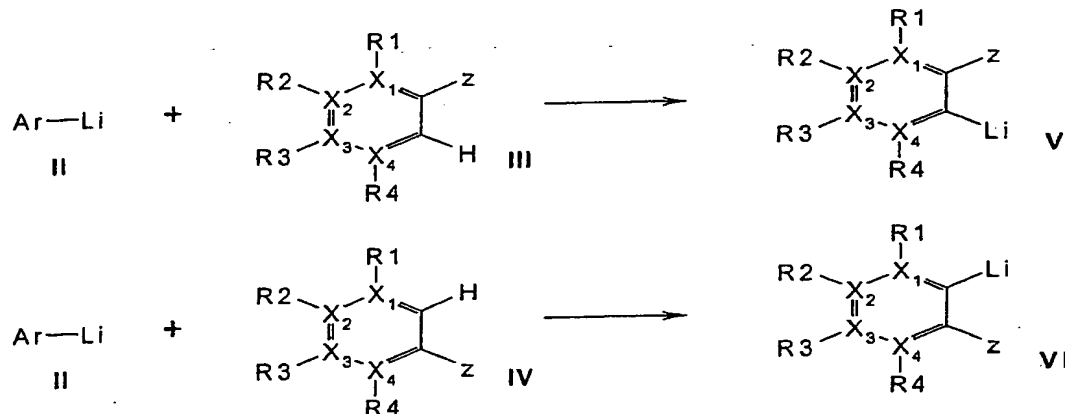
Claims:

1. A process for preparing compounds of the formulae (VII) and (VIII) via aryllithium compounds of the formulae (V) and (VI) and reaction of these with suitable electrophiles, aryl halides of the formula (I) are reacted with lithium metal to generate a lithium compound (II), this is used for deprotonating the aromatic substrate (III) or (IV), and is finally converted by addition of the electrophilic component into the target compound of the formula (VII) or (VIII) (equation 1), and the steps 1 to 3 are carried out as a one-pot reaction,

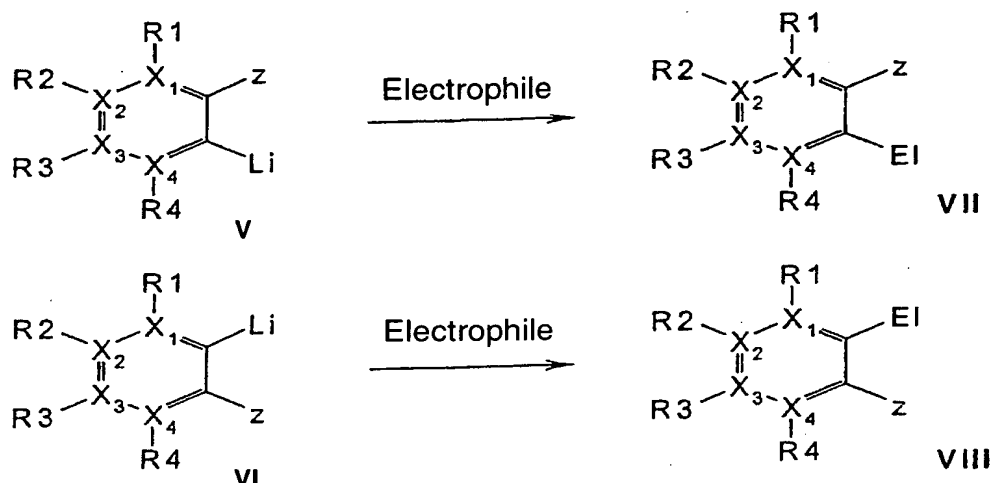
Step 1: Generation of the base



Step 2: Deprotonation of the substrate



Step 3: Reaction of the aryllithium compound with an electrophile



(Equation 1)

5 where Ar is phenyl, alkyl-substituted phenyl, fluorine- or chlorine-substituted phenyl, naphthyl-, alkyl-substituted naphthyl or is biphenyl,

Hal = fluorine, chlorine, bromine or iodine,

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the radicals X₁₋₄ are, independently of one another, either carbon, X_iR_i (i = 1-4) can symbolize nitrogen, or two radicals X_iR_i which are adjacent or connected via a formal double bond can together be O (furans), S (thiophenes), NH or NR_i (pyrroles),

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Z is, in the case of benzoidal aromatics, a group which activates the ortho position, for example CF₃, OCF₃, Cl, F, Oalkyl, Oaryl, Salkyl, Saryl, CH₂OH, CH₂OR, CH(OR)₂, CONR₂, NHR, NR₂, or in the case of heterocycles has the same meaning as R₁₋₄,

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the radicals R₁₋₄ are substituents selected from the group consisting of hydrogen, methyl, primary, secondary or tertiary, cyclic or acyclic alkyl radicals having from 2 to 12 carbon atoms, substituted cyclic or acyclic alkyl groups, alkoxy, dialkylamino, alkylamino, arylamino, diarylamino, phenyl, substituted phenyl, alkylthio, diarylphosphino,

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5 dialkylphosphino, dialkylaminocarbonyl or diarylaminocarbonyl, monoalkylaminocarbonyl or monoarylaminocarbonyl, CO₂alkyl, CO₂⁻, 1-hydroxyalkyl, 1-alkoxyalkyl, fluorine or chlorine, CN or heteroaryl, where two adjacent radicals R₁₋₄ can together correspond to a fused-on aromatic or aliphatic ring,

and "Electrophile" is any electrophilic component which can be reacted with aryllithium compounds.

10 2. The process as claimed in claim 1, wherein the compounds of the formula (III) or (IV) are selected from the group consisting of benzenes, furans, thiophenes, pyridines, pyridazines, pyrimidines, pyrazines, N-substituted pyrroles, benzofurans, indoles and naphthalenes.

15 3. The process as claimed in claim 1 or 2, characterized in that the electrophile used is a compound selected from the following group: oxirane, substituted oxirane, azomethine, aryl or alkyl cyanate, nitroenolate, immonium salts, haloaromatics, aryl triflates, other aryl
20 sulfonates, carbon dioxide, carbon monoxide, aldehydes, ketones, α,β -unsaturated aldehydes or ketones, ketenes, alkali metal or alkaline earth metal salts of carboxylic acids, aliphatic nitriles, aromatic nitriles, amides, esters and alkylating agents and boron electrophiles of the formula BW₃, where the radicals W are identical or different and are each C₁-C₆-alkoxy, fluorine, chlorine, bromine,
25 iodine, N(C₁-C₆-alkyl)₂ or S(C₁-C₅-alkyl), and silicon electrophiles of the formula SiW₄, where the radicals W are identical or different and are each C₁-C₆-alkoxy, fluorine, chlorine, bromine, iodine, N(C₁-C₆-alkyl)₂ or S(C₁-C₅-alkyl).

30 4. The process as claimed in at least one of the preceding claims, characterized in that the reaction is carried out in an organic ether solvent.

5. The process as claimed in at least one of the preceding claims, characterized in that the reaction temperature is in the range from -100 to +35°C.
- 5 6. The process as claimed in at least one of the preceding claims, characterized in that the concentrations of the aromatic intermediates of the formula (II) or (IV) are in the range from 5 to 30% by weight.
- 10 7. The process as claimed in at least one of the preceding claims, characterized in that the amount of lithium added per mole of halogen reacted is from 1.95 to 2.5 mol.
- 15 8. The process as claimed in at least one of the preceding claims, characterized in that organic redox systems are added to the reaction mixture, preferably in amounts of < 0.5 mol%.